

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 429032-402478

Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Number Client Info GFL0082706 GFL0082776 GFL00727	RON SHP 15W40 (GAL)	Dec2021	Dec2022 Jan2023	Mar2023 Apr2023 J	un2023	
Sample Date Client Info 28 Jun 2023 22 Jun 2023 18 May 202 Machine Age hrs Client Info 11920 11882 11706 Oil Age hrs Client Info 38 1776 128 Oil Changed Client Info 38 1776 128 Oil Changed Client Info Sample Status NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history 1 history 1 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Iron ppm ASTM D5165m >12.0 4 4 2 Chromium ppm ASTM D5165m<>12.0 <1 <1 0 0 Nickel ppm ASTM D5165m<>2.2 0 0 0 0 Silver ppm ASTM D5165m<>2.2 0 0 0 0 Chromium ppm ASTM D5165m<>1.5 <1 <1 <1 0	SAMPLE INFOR	RMATION	method	limit/base	current	history 1	history 2
Machine Age hrs Client Info 11920 11882 11706 Oil Age hrs Client Info 38 176 128 Oil Changed Client Info 38 176 128 Oil Changed Client Info NORMAL NORMAL NORMAL CONTAMINATION method Imit/base current history 1 history 1 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0082706	GFL0082678	GFL0064678
Oil Age hrs Client Info 38 176 128 Oil Changed Client Info Changed </td <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>28 Jun 2023</td> <td>22 Jun 2023</td> <td>18 May 2023</td>	Sample Date		Client Info		28 Jun 2023	22 Jun 2023	18 May 2023
Oil Changed Sample StatusClient InfoChanged NORMALChanged NORMALChanged NORMALChanged NORMALCONTAMINATIONmethodlimit/basecurrenthistory 1history 1FuelWC Method>3.0<1.0	Machine Age	hrs	Client Info		11920	11882	11706
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history 1 history 1 Fuel WC Method >3.0 <1.0	Oil Age	hrs	Client Info		38	176	128
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Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 <1.0 Glycol WC Method WEG NEG NEG NEG Uron ppm ASTM D5185m >120 4 4 2 Chromium ppm ASTM D5185m >20 <1 <1 0 Nickel ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Capper ppm ASTM D5185m >40 0 0 0 Cadmium ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m 0 8 16 14 Barium ppm ASTM D5185m 0 8	Sample Status				NORMAL	NORMAL	NORMAL
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Glycol WC Method NEG NEG NEG VEAR METALS method limit/base current history 1 history 1 Iron ppm ASTM D5185m >20 <1	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
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Potassium ppm ASTM D5185m >20 8 6 8 INFRA-RED method limit/base current history 1 history 3 Soot % % *ASTM D7844 >4 0.3 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 7.3 7.1 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 19.3 18.3 FLUID DEGRADATION method limit/base current history 1 history 3 Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2	Silicon	ppm	ASTM D5185m	>25	4	3	4
INFRA-RED method limit/base current history 1 history 2 Soot % % *ASTM D7844 >4 0.3 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 7.3 7.1 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 19.3 18.3 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2	Sodium	ppm	ASTM D5185m		3	3	3
Soot % % *ASTM D7844 >4 0.3 0.3 0.1 Nitration Abs/cm *ASTM D7624 >20 7.3 7.1 5.7 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 19.3 18.3 FLUID DEGRADATION method limit/base current history 1 history 3 Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2	Potassium	ppm	ASTM D5185m	>20	8	6	8
Nitration Abs/cm *ASTM D7624 >20 7.3 7.1 5.7 Sulfation Abs/.1mm *ASTM D7615 >30 19.5 19.3 18.3 FLUID DEGRADATION method limit/base current history 1 history 2 Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2	INFRA-RED		method	limit/base	current	history 1	history 2
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Sulfation Abs/.1mm *ASTM D7415 >30 19.5 19.3 18.3 FLUID DEGRADATION method limit/base current history 1 history 3 Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2	Nitration	Abs/cm	*ASTM D7624	>20	7.3	7.1	5.7
Oxidation Abs/.1mm *ASTM D7414 >25 15.4 15.2 14.2							
	FLUID DEGRA		method	limit/base	current	history 1	history 2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	15.2	14.2
	Base Number (BN)	mg KOH/a	ASTM D2896	9.8	7.8	7.9	8.5

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



13 Abnorma

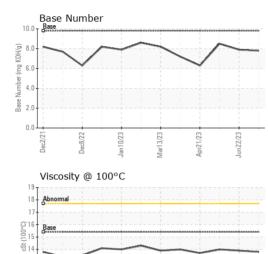
12

Dec2/21

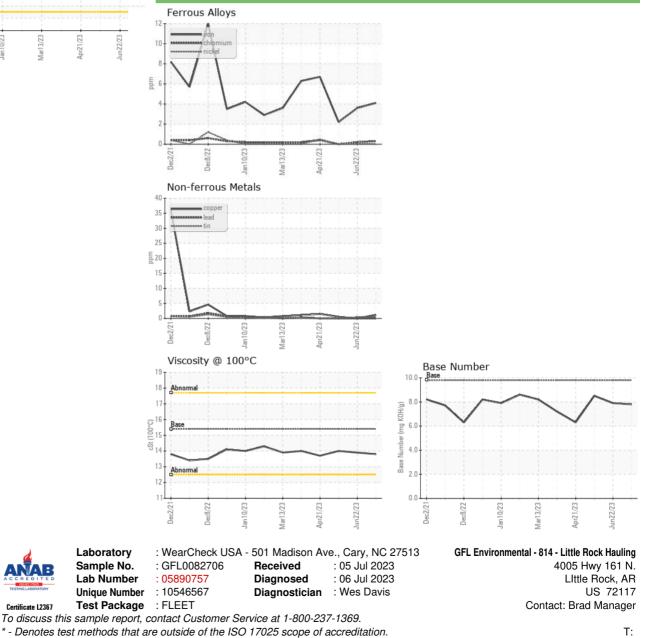
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OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9	14.0
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)